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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,922	11/03/2003	Johanna Bergmann	830006-2000	5900

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EXAMINER	
EMCH, GREGORY S	

ART UNIT	PAPER NUMBER
1649	

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/700,922	BERGMANN ET AL.	
	Examiner	Art Unit	
	Gregory S. Emch	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-10* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claim 1 is drawn to the method called "disease gene-discovery-by-positional-searching," classified in class 435, subclass 91.1, for example.

II-IV. Claims 1and 2 are drawn to the coding sequences of SEQ ID NOs: 1, 5, and 14, classified in class 536, subclass 23.1, for example.

V-XVII. Claim 1 is drawn to the regulatory sequences of SEQ ID NOs: 7, 8, 9, 10, 11, 12, 13, 17, 18, 19, 20, 21, and 22, classified in class 536, subclass 24.1, for example.

XVIII-XX. Claims 1 and 3 are drawn to the proteins whose sequence IDs are SEQ ID NO: 2 and amino acids 68-79 of SEQ ID NO: 2, SEQ ID NO: 6 and amino acids 20-51, and SEQ ID NO: 15 and amino acids 33-44 of SEQ ID NO: 15, classified in class 530, subclass 324, for example.

XXI-XXIII. Claim 4 is drawn to ELISA methods with recombinant antibodies that detect the proteins of amino acids 68-79 of SEQ ID NO: 2, amino acids 20-51 of SEQ ID NO: 6, and amino acids 33-44 of SEQ ID NO: 15, classified in class 435, subclass 7.1, for example.

XXIV-XXVI. Claim 5 is drawn to ELISA methods that detect endogenous antibodies that are capable of neutralizing the proteins of amino acids 68-79 of SEQ ID NO: 2, amino acids 20-51 of SEQ ID NO: 6, and amino

acids 33-44 of SEQ ID NO: 15, classified in class 435, subclass 7.5, for example.

XXVII-XXIX. Claim 6 is drawn to antibodies that act against the protein sequences of amino acids 68-79 of SEQ ID NO: 2, amino acids 20-51 of SEQ ID NO: 6, and amino acids 33-44 of SEQ ID NO: 15, classified in class 424, subclass 139.1, for example.

XXX-XXXII. Claim 7 is drawn to methods of active vaccination to prevent and stop initiation and progression of Alzheimer's disease, wherein the vaccine includes the protein sequences of amino acids 68-79 of SEQ ID NO: 2, amino acids 20-51 of SEQ ID NO: 6, and amino acids 33-44 of SEQ ID NO: 15, classified in class 530, subclass 300, for example.

XXXIII-XXXV. Claims 8 and 9 are drawn to methods of passive vaccination to prevent and stop initiation and progression of Alzheimer's disease, wherein the vaccine includes antibodies against the proteins of amino acids 68-79 of SEQ ID NO: 2, amino acids 20-51 of SEQ ID NO: 6, and amino acids 33-44 of SEQ ID NO: 15, classified in class 424, subclass 130.1, for example.

XXXVI-XXXVIII. Claim 10 is drawn to anti-DNA antibodies directed against molecules of SEQ ID NOs: 7, 8, 9, 10, 11, 12, 13, 1, 18, 19, 20, 21, and 22, classified in class 530, subclass 387.1, for example.

The inventions are distinct, each from the other because of the following reasons:

Although there are no provisions under the section for "Relationship of Inventions" in M.P.E.P. § 806.05 for Inventions that are directed to different methods, restriction is deemed to be proper because these methods appear to constitute patentably distinct inventions for the following reasons: Each of inventions I, XXI-XXVI, and XXX-XXXV are directed to methods that are distinct both physically and functionally, and are not required one for the other. Invention I requires the method "disease gene-discovery-by-positional-searching," which is not required by any one of inventions XXI-XXVI and XXX-XXXV. Inventions XXI-XXVI are distinct each one from the other, because they are drawn to unique molecules, as evidenced by the methods reciting different sequence identifiers. Similarly, inventions XXX-XXXV are distinct each one from the other, because they are drawn to unique molecules, as evidenced by the methods reciting different sequence identifiers.

Inventions XXI-XXIII require recombinant antibodies that detect specific amino acid sequences, which are not required by any one of inventions I, XXIV-XXVI and XXX-XXXV. Inventions XXIV-XXVI require endogenous antibodies that are capable of neutralizing specific amino acid sequences, which are not required by any one of inventions I, XXI-XXIII, and XXX-XXXV. Inventions XXX-XXXII require active vaccination with specific protein sequences, which is not required by any one of inventions I, XXI-XXVI, and XXXIII-XXXV. Inventions XXXIII-XXXV require passive vaccination with antibodies against specific, which is not required by any one of inventions I, XXI-XXVI, and XXX-XXXII. Therefore, a search and examination of all of these methods in one patent application would result in an undue burden, since the

searches for the methods are not co-extensive, the classification is different, and the subject matter is divergent.

Although there are no provisions under the section for "Relationship of Inventions" in M.P.E.P. § 806.05 for Inventions that are directed to different products, restriction is deemed to be proper because these products constitute patentably distinct inventions for the following reasons. Inventions II-XX, XXVII-XXIX, and XXXVI-XXXVIII are independent and distinct, each from the other, because they are products which possess characteristic differences in structure and function and each has an independent utility, that is distinct for each invention which cannot be exchanged.

The polynucleotides of inventions II-XVII and the polypeptides of Inventions XVIII-XX are patentably distinct for the following reasons: polypeptides, which are composed of amino acids, and polynucleotides, which are composed of purine and pyrimidine units, are structurally distinct molecules; any relationship between a polypeptide and polynucleotide is dependent upon the information provided by the nucleic acid sequence open reading frame as it corresponds to the primary amino acid sequence of the encoded polypeptide. In the present claims, the polynucleotides of inventions II-XVII do not necessarily encode the polypeptides of inventions XVIII-XX.

Furthermore, searching the inventions of Groups II-XVII and XVIII-XX together would impose a serious search burden, because the search of the polypeptides and the polynucleotides is not coextensive. The inventions of II-XVII and XVIII-XX have a separate status in the art as shown by their different classifications. In cases such as this one where descriptive sequence information is provided, the sequences are

searched in appropriate databases. There is also search burden in the non-patent literature. Prior to the concomitant isolation and expression of the sequence of interest there may be journal articles devoted solely to polypeptides, which would not have described the polynucleotide. Similarly, there may have been "classical" genetics papers which had no knowledge of the polypeptide, but spoke to the gene. Searching, therefore, is not coextensive. Furthermore, a search of the nucleic acid molecules of groups II-XVII would require an oligonucleotide search, which is not likely to result in relevant art with respect to the polypeptides of groups XVIII-XX. As such, it would be burdensome to search the inventions of II-XVII and XVIII-XX together.

The polypeptides of inventions XVIII-XX and the antibodies of inventions XXVII-XXIX and XXXVI-XXXVIII are patentably distinct for the following reasons: While the inventions of groups XVIII-XX, XXVII-XXIX, and XXXVI-XXXVIII are polypeptides, in this instance, the polypeptides of inventions XVIII-XX are single chain molecules, whereas the polypeptides of inventions XXVII-XXIX and XXXVI-XXXVIII encompass antibodies that include IgG, which comprises 2 heavy and 2 light chains containing constant and variable regions, including framework regions which act as a scaffold for the 6 complementary determining regions (CDRs) that function to bind an epitope. Thus, the polypeptides of inventions XVIII-XX and the antibodies of inventions of XXVII-XXIX and XXXVI-XXXVIII are structurally distinct molecules. Any relationship between said polypeptides and said antibodies is dependent upon the correlation between the scope of the polypeptides that the antibody binds and the scope of the antibodies that would be generated upon immunization with a polypeptide.

Furthermore, searching the inventions of groups XVIII-XX, XXVII-XXIX, and XXXVI-XXXVIII would impose a serious search burden. The inventions have a separate status in the art as shown by their different classifications. Even a polypeptide and an antibody that binds to the polypeptide require different searches. An amino acid search of the full-length protein is necessary for a determination of novelty and unobviousness of the protein. However, such a search is not required to identify the antibodies of inventions XXVII-XXIX and XXXVI-XXXVIII. In addition, the technical literature search for the polypeptides of inventions XVIII-XX and the antibodies of inventions XXVII-XXIX and XXXVI-XXXVIII is not coextensive, e.g. antibodies may be characterized in the technical literature prior to discovery of, or sequencing of, their binding target.

The polynucleotides of inventions II-XVII and the antibodies of inventions XXVII-XXIX and XXXVI-XXXVIII are patentably distinct for the following reasons: the antibodies of inventions XXVII-XXIX and XXXVI-XXXVIII include, for example, IgG which comprises 2 heavy and 2 light chains containing constant and variable regions, including framework regions which act as a scaffold for the 6 complementary determining regions (CDRs). Polypeptides, such as the antibodies of inventions XXVII-XXIX and XXXVI-XXXVIII, which are composed of amino acids, and polynucleotides, which are composed of nucleic acids, are structurally distinct molecules. Therefore, the antibodies and polynucleotides are patentably distinct.

The antibody and polynucleotide inventions have a separate status in the art as shown by their different classifications. Furthermore, searching the inventions of groups II-XVII and the inventions of groups XXVII-XXIX and XXXVI-XXXVIII would impose a

serious search burden since a search of the polynucleotides of inventions II-XVII would not be used to determine the patentability of an antibody of inventions XXVII-XXIX and XXXVI-XXXVIII and vice-versa.

Furthermore, Inventions II-XVII are distinct each one from the other, because they are drawn to unique nucleic acid molecules, as evidenced by different sequence identifiers. Inventions XVIII-XX are distinct each one from the other, because they are drawn to unique proteins, as evidenced by different sequence identifiers. Inventions XXVII-XXIX are distinct each one from the other, because they are drawn to unique antibodies that act against different proteins with different sequence identifiers. Inventions XXXVI-XXXVIII are distinct each one from the other, because they are drawn to unique anti-DNA antibodies that directed against different nucleic acid molecules with different sequence identifiers.

Invention I and each of II-XVII are related as process of making and products made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case Invention I can used to isolate a plurality of nucleic acid molecules that are independent and distinct from those claimed in groups II-XVII.

Inventions II-XVII and each of XXI-XXVI and XXX-XXXV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different

effects (MPEP § 806.04, MPEP § 808.01). In the instant case, inventions II-XVII and each of XXI-XXVI and XXX-XXXV are unrelated product and processes, wherein each is not required, one for another. For example, the claimed methods of inventions XXI-XXVI and XXX-XXXV do not recite the use or production of the nucleic acids of Inventions II-XVII.

Inventions XVIII-XX and each of inventions XXI-XXVI and XXX-XXXV are related as products and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the proteins of Inventions XVIII-XX can be used in *in vivo* imaging techniques.

Invention I and each of XVIII-XX, XXVII-XXIX, and XXXVI-XXXVIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case invention I and each of XVIII-XX, XXVII-XXIX, and XXXVI-XXXVIII are unrelated product and processes, wherein each is not required, one for another. For example, the claimed method of Invention I does not recite the use or production of the proteins of Inventions XVIII-XX, XXVII-XXIX, and XXXVI-XXXVIII.

Inventions XXVII-XXIX and each of inventions XXI-XXVI and XXXIII-XXXV are related as products and processes of use. The inventions can be shown to be distinct if

either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the proteins of Inventions XVIII-XX can be used in *in vivo* imaging techniques.

Inventions XXVII-XXIX and each of XXX-XXXII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, inventions XXVII-XXIX and each of XXX-XXXII are unrelated product and processes, wherein each is not required, one for another. For example, the claimed methods of inventions XXX-XXXII do not recite the use or production of the antibodies of inventions XXVII-XXIX.

Inventions XXXVI-XXXVIII and each of XXI-XXVI and XXX-XXXV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, inventions XXXVI-XXXVIII and each of XXI-XXVI and XXX-XXXV are unrelated products and processes, wherein each is not required, one for another. For example, the claimed methods of invention XXI-XXVI and XXX-XXXV do not recite the use or production of the antibodies of inventions XXXVI-XXXVIII.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1649.

Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory S. Emch whose telephone number is (571) 272-8149. The examiner can normally be reached on Monday through Friday from 8:30AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet L. Andres can be reached at (571) 272-0867. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory S. Emch, Ph. D.
Patent Examiner
Art Unit 1649
November 1, 2005

JOSEPH MURPHY
PATENT EXAMINER